Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

AMERICAN

Journal of Mathematics

EDITED BY

FRANK MORLEY

WITH THE COOPERATION OF

A. COHEN, CHARLOTTE A. SCOTT

AND OTHER MATHEMATICIANS

PUBLISHED UNDER THE AUSPICES OF THE JOHNS HOPKINS UNIVERSITY

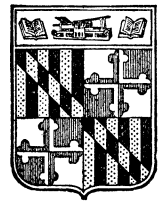
Πραγμάτων ἔλεγχος οὐ βλεπομένων

VOLUME XXXV

BALTIMORE: THE JOHNS HOPKINS PRESS

LEMCKE & BUECHNER, *New York.*
G. E. STECHERT & CO., *New York.*
E. STEIGER & CO., *New York.*
KEGAN PAUL, TRENCH, TRÜBNER & CO., *London.*
A. HERMANN, *Paris.*
MAYER & MÜLLER, *Berlin.*
KARL J. TRÜBNER, *Strassburg.*
ULRICO HOEPLI, *Milan.*

1913



The Lord Baltimore Press
BALTIMORE, MD., U. S. A.

INDEX.

BACON, CLARA LATIMER. The Cartesian Oval and the Elliptic Functions p and σ . 261

BATEMAN, H. The Double Tangents of a Binodal Quartic, ... 57

BEAL, FREDERICK WAHN. Normal Congruences Determined by Centers of Geodesic Curvature. 10

BIRKHOFF, GEORGE D. The Reducibility of Maps, ... 115

CARMICHAEL, R. D. Linear Mixed Equations and their Analytic Solutions, ... 151

CARMICHAEL, R. D. On the Theory of Linear Difference Equations, ... 163

CARPENTER, A. F. A Theorem for the Development of a Function as an Infinite Product, ... 105

DICKSON, LEONARD EUGENE. Finiteness of the Odd Perfect and Primitive Abundant Numbers with n Distinct Prime Factors, ... 413

DICKSON, L. E. Even Abundant Numbers, ... 423

DINES, LLOYD L. The Highest Common Factor of a System of Polynomials in One Variable, ... 129

EIESLAND, J. On a Flat Spread-Sphere Geometry in Odd-dimensional Space, . . . 201

EMCH, ARNOLD. Some Properties of Closed Convex Curves in a Plane, ... 407

FISCHER, CHARLES ALBERT. A Generalization of Volterra's Derivative of a Function of a Curve, ... 369

HENNEL, CORA B. Transformations and Invariants Connected with Linear Homogeneous Difference Equations and Other Functional Equations, ... 431

HUDSON, HILDA P. On the Product of Two Quadro-Quadric Space-Transformations, 183

LEFSCHETZ, SOLOMON. On Some Topological Properties of Plane Curves and a Theorem of Möbius, ... 189

MACMAHON, MAJOR P. A. The Indices of Permutations and the Derivation therefrom of Functions of a Single Variable Associated with the Permutations of any Assemblage of Objects, ... 281

MANNING, W. A. The Primitive Groups of Class Twelve, ... 229

MILLER, G. A. Groups Containing a Given Number of Operators Whose Orders Are Powers of the Same Prime Number, ... 1

MORGAN, FRANK M. Involutorial Transformations, ... 79

NYBERG, JOSEPH A. Projective Differential Geometry of Rational Cubic Curves, . . 453

OWENS, HELEN BREWSTER. Conjugate Line Congruences of the Third Order Defined by a Family of Quadrics, ... 323

SCHOUTE, P. H. On the Four-dimensional Angles of the Semiregular Polotypes of S_4, 357

SCHWEITZER, ARTHUR RICHARD. A Theory of Geometrical Relations.—Continued, . 37

SHAW, JAMES BYRNIE. On Differential Invariants, ... 395

THOMPSON, HENRY D. The Identical Relations between the Elements of any Oblique Triple System of Surfaces, ... 427